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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,707	06/24/2005	Michael Adrianus Henricus Van Der Aa	NL 021472	2503

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EXAMINER

BATTAGLIA, MICHAEL V

ART UNIT

PAPER NUMBER

2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/540,707

Applicant(s)

VAN DER AA ET AL.

Examiner

Michael V. Battaglia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Objections***

2. Claim 9 is objected to because of the following informality. On line 4 of claim 9, replacing "arm and" with --arm, and-- is suggested. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuhn (US 4,686,663).

In regard to claim 1, Kuhn discloses an optical scanning device for scanning tracks (Fig. 5) of an optical record carrier ("disk shaped information carrier" of Col. 8, line 11) using a radiation beam ("light bundle" of Col. 8, line 5), the device including: an optical head (Fig. 4), defining an optical axis, for converging the radiation beam to a spot (Fig. 5, element H) when scanning the record carrier; and a rotary arm ("swivel arm" of Col. 7, lines 25, 62 and 65) for moving the optical head across the record carrier, characterized in that the device further comprises an optical arrangement (Fig. 4, element Ph) for generating satellite beams (Fig. 4, elements A and B) for performing multi-spot tracking (Col. 6, lines 5-12 and 55-57), and in that the optical arrangement is arranged to move the satellite beams, relative to said optical axis of

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the optical head, in correspondence with rotation of the rotary arm (Figs. 4 and 5; Col. 7, line 64-Col. 8, line 5; Col. 8, lines 15-31 and note that the deviation (i.e. tangent angle error), which is corrected by the rotation of element Ph, changes in correspondence with the rotation of the rotary arm).

In regard to claim 2, Kuhn discloses that the optical arrangement is arranged to rotate the satellite beams, relative to said optical axis of the optical head, in correspondence with rotation of the rotary arm (Fig. 5; Col. 7, line 64-Col. 8, line 5; Col. 8, lines 15-31 and note that the deviation (i.e. tangent angle error), which is corrected by the rotation of element Ph, changes in correspondence with the rotation of the rotary arm).

In regard to claim 3, Kuhn discloses that the optical arrangement comprises means (Fig. 4, element Ph) for generating the satellite beams (Col. 7, lines 38-41), and said means are rotatable to provide said movement of the satellite beams (Fig. 4 and Col. 8, lines 15-31).

In regard to claim 4, Kuhn discloses that said means comprise a diffraction grating (Fig. 4, element Ph; Col. 1, lines 30-33; and Abstract, lines 4-5).

4. Claims 1, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim (US 5,606,542).

In regard to claim 1, Kim discloses an optical scanning device for scanning tracks (Fig. 5A, element 35) of an optical record carrier (Figs. 3 and 5A, element D) using a radiation beam ("main beam" of Col. 5, lines 19), the device including: an optical head (Fig. 3), defining an optical axis, for converging the radiation beam to a spot (Fig. 5A, element 31) when scanning the record carrier; and a rotary arm ("swing arm" of Col. 7, lines 11-12 and 40 and Col. 8, line 67) for moving the optical head across the record carrier, characterized in that the device further

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comprises an optical arrangement (Figs. 3 and 4, element 30) for generating satellite beams (Fig. 5A, elements 31a and 31b) for performing multi-spot tracking (Col. 5, lines 15-21), and in that the optical arrangement is arranged to move the satellite beams, relative to said optical axis of the optical head, in correspondence with rotation of the rotary arm (Col. 7, line 10-Col. 9, line 11 and in particular Col. 7, line 39-Col. 8, line 2).

In regard to claim 6, Kim discloses that said device comprises a detector array (Figs. 3 and 5B, elements 47 and 49) comprising satellite detector elements (Fig. 5B, elements 492 and 493) arranged to detect satellite detector spots in a range of rotational positions about a main detector spot.

In regard to claim 7, Kim discloses that said satellite detector elements comprise two elements (Fig. 5B, elements 492 and 493) separated by a separation line which is generally aligned with a direction of movement of the satellite detector spots when the rotary arm is rotated (note that elements 492 and 493 are separated at least by a line in the radial direction, which is generally aligned with a direction of movement of the satellite detector spots when the rotary arm is rotated, and that claim 7 does not require that each of the "satellite detector elements" comprises two elements).

5. Claims 1 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Noguchi (US 5,790,509).

In regard to claim 1, Noguchi discloses an optical scanning device (Fig. 1) for scanning tracks (Fig. 2, elements T0-T2) of an optical record carrier (Fig. 1, elements 10 and 11) using a radiation beam (Col. 6, lines 52-54), the device including: an optical head (Fig. 1, element 1), defining an optical axis, for converging the radiation beam to a spot (Fig. 2, element B0) when

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scanning the record carrier; and a rotary arm (Fig. 1, element 2) for moving the optical head across the record carrier, characterized in that the device further comprises an optical arrangement (inherent to the existence of the elements B1 and B2 of Fig. 2 which are used in 3-beam tracking) for generating satellite beams (Fig. 2, elements B1 and B2) for performing multi-spot tracking (Col. 1, lines 15-21 and Col. 6, lines 25-27), and in that the optical arrangement is arranged to move the satellite beams, relative to said optical axis of the optical head, in correspondence with rotation of the rotary arm (Fig. 3 and Col. 5, lines 40-33).

In regard to claim 9, Noguchi discloses that the optical arrangement is arranged to move the satellite beams between a first positioning, in a first rotary position of the arm and a second positioning, in a second rotary position of the arm, so as to take into account rotary movement of the arm relative to the record carrier (Fig. 3).

In regard to claim 10, Noguchi discloses that the record carrier is in the form of an optical disc and the optical arrangement is arranged to move the satellite beams between a first positioning, in a first rotary position of the arm and a second positioning, in a second rotary position of the arm, so as to take into account angular separation of the tracks, relative to each other, at the optical head in the first and second positions of the rotary arm (Fig. 3).

In regard to claim 11, Noguchi discloses that the optical arrangement is arranged to position satellite beam spots on the record carrier along a line (Fig. 3, element G) which is substantially perpendicular to the direction of the tracks (Col. 6, lines 28-32).

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US 5,748,605).

Lee discloses an optical scanning device (Figs. 4-6) for scanning tracks (Fig. 3, elements T1 and T2) of an optical record carrier ("recording medium" of Col. 4, line 24) using a radiation

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beam ("light" of Col. 4, line 15), the device including: an optical head (Figs. 4-6, element 100), defining an optical axis, for converging the radiation beam to a spot ("focal point" of Col. 4, line 24) when scanning the record carrier; and a rotary arm (Figs. 4-6, element 43) for moving the optical head across the record carrier, characterized in that the device further comprises an optical arrangement (Figs. 4-6, element 60 and the inherent element which generates the "diffractions lights" of Col. 2, line 12) for generating satellite beams ("diffractions lights" of Col. 2, line 12) for performing multi-spot tracking (Col. 2, lines 9-14), and in that the optical arrangement is arranged to move the satellite beams, relative to said optical axis of the optical head, in correspondence with rotation of the rotary arm (Col. 3, lines 23-50 and Col. 4, lines 20-64).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Hsu et al (hereafter Hsu) (US 6,259,663).

Kim discloses that said device comprises a radiation source (Figs. 3 and 4, element 30) but does not disclose that the radiation source is mounted separately from said rotary arm.

Hsu discloses mounting a radiation source (Fig. 1, element 110) separately from a rotary arm (Fig. 1, element 129) and teaches that, by doing so, payload is minimized, seek time is decreased, and power consumption is reduced (Col. 2, lines 9-32).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the radiation source of Kim to be mounted separately from the rotary arm of Kim as suggested by Hsu, the motivation being minimize payload, decrease seek time, and reduce power consumption.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Tateishi (US 6,259,663).

Kim discloses the optical scanning device of claim 6 but does not disclose that said device comprises spot-size type or Foucault type optical element associated with said detector array. Instead, Kim discloses that said device comprises an astigmatism type optical element (Fig. 3, element 46) associated with said detector array (Col. 6, lines 33-36 and 40-44 and Col. 1, lines 65-67 and note that a cylindrical lens gives astigmatism to a light beam for generation of a focus error signal).

Tateishi discloses a spot-size type optical element (Fig. 1, element 6 and Col. 6, lines 43-48) associated with a detector array (Fig. 1, element 7). Tateishi further discloses that a spot size method, which uses a spot-size type optical element, is an art-recognized equivalent to an astigmatism method, which uses an astigmatism type optical element, for the purpose of generating a focus error signal (Col. 6, lines 43-48).

Therefore, the spot size method using the spot-size type optical element of Tateishi was an art-recognized equivalent to the astigmatism method using the astigmatism type optical element of Kim at the time of the invention for the purpose of generating a focus error signal and one of ordinary skill would have found it obvious to use either one including the spot size



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method using the spot-size type optical element of Tateishi for generating a focus error signal in the device of Kim.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Aoi (US 4,695,992).

Lee discloses the optical scanning device according to claim 1, wherein the optical arrangement is arranged to position satellite beam spots on the record carrier using multi-spot tracking (Col. 2, lines 9-14). Lee does not disclose that optical arrangement is arranged to position the satellite beams along a line which is substantially perpendicular to the direction of the tracks.

Aoi discloses arranging an optical arrangement (Fig. 3, element 303 and Col. 4, lines 58-68) to position satellite beams (Fig. 4B, elements 407 and 408) along a line which is substantially perpendicular to the direction of the tracks (Fig. 4B) to effect "highly accurate tracking control" using multi-spot tracking during recording (Col. 3, lines 7-11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the optical arrangement of Lee to be arranged to position the satellite beams along a line which is substantially perpendicular to the direction of the tracks as suggested by Aoi, the motivation being to effect highly accurate tracking control using multi-spot tracking during recording.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yagi et al (US 5,920,532) disclose rotating a diffraction grating for use of a 3-beam tracking method with discs of different densities (Figs. 81 and 82). Kazmierczak et al (US

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6,005,751) (Fig. 4) and Akiyama et al (US 5,801,908) (Fig. 5) disclose rotating a magnetic head in correspondence with the rotation of a rotary arm.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V. Battaglia whose telephone number is (571) 272-7568.

The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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